Internal battery

1 General

The internal battery can be used to bridge a short power gap, e.g. when transporting a patient. When the device is powered from the internal battery, the following messages/alarms are generated until the internal battery is discharged:

- Int. battery activated
- Int. battery low
- Int. battery almost empty

If, after the message ”Int. battery almost empty” is displayed, the device is operated until is fails (residual time), the internal battery can be damaged by complete discharge.

Since the patient’s safety, that is the ventilation of the patient, is top priority, the device can be operated until the internal battery fails, even if this might damage the internal battery.

2 Operating time of the Savina with internal battery

The total running time of the device, comprising the operating time and the residual time, is approximately one hour. The operating time of the device is the time from the ”Int. battery activated” message until the ”Int. battery almost empty” alarm. The residual time is the remaining running time until the device fails.

The running time can only be achieved under the following conditions:

- the internal battery is fully charged (at east 6 hours of charging time) and has been installed in the device for no longer than two years
- the internal battery has not been damaged by a complete discharge or by the use of an external charging device
- the test is carried out at room temperature
- The following parameters are adjusted on the Savina:
  CMV (= IPPV)
  VT = 700 mL
  f = 12
  PEEP = 5 mbar

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Ti = 2 s
FiO2 = 60%
FlowAcc = 30 mbar/s

– The test lung provides the following values:
Resistance = 5 ml/L/s
Compliance = 50 ml/mbar (these values are achieved with the Dräger test lung 8403201)

Approximately 80% of the energy are required for the operation of the blower. In particular, by increasing the parameters FlowAcc, Pinsp, and VT up to the maximum capacity of the Savina, the operating time with the internal battery will be decreased to less than 30 minutes.

3 Internal battery care and possible damage

3.1 Leave the device always connected to an AC power source

To ensure a maximum internal battery capacity, we recommend leaving the Savina connected to a functional AC power source even when the Savina is not in use. The microprocessor-controlled charging management will then ensure that the internal battery is always charged optimally. There is no risk of overcharging the internal battery.

3.2 How to avoid a complete discharge

The O2 sample cells draw a continuous current of 1 mA in order to maintain their measurement ability. This current can be interrupted by removing the fuse of the internal battery (on back of the Savina).

Spontaneous discharge of the internal battery is also in the range of 1 mA. This current consumption, however, cannot be avoided.

As a rule, always store a Savina with its internal battery fully charged.

When storage times exceed three (3) weeks, always remove the fuse of the internal battery (on back of the device).

After a complete discharge, the internal battery needs to be recharged. Completely discharged internal batteries that are stored over a longer period of time will suffer damage.

If an internal battery is completely discharged several times, it will be irreversibly damaged and cannot be recharged by the Savina.

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